

**Application No.:** 10/591,372  
**Filing Date:** June 25, 2007

### **AMENDMENTS TO THE DRAWINGS**

Applicant hereby submits, with this amendment, new drawing sheets illustrating the internal grooves of Claim 1, the threaded inner surface of Claims 17-20, 31-34, the vertical extending grooves of Claims 22 and 36, and the grooved surface of Claim 23.

New Figure 1A is similar to Figure 1, with new reference number 1a which illustrates an example of a threaded inner surface. Similarly, new Figure 1B illustrates an example of internal grooves or a grooved surface 1b. New Figure 1C illustrates an example of vertical extending grooves 1c. Also, reference number 11 was added in Figures 1A – 1C to identify an example of a tooth prosthesis. Applicant submits that no new matter was added and support for the surface features can be found in at least page 9, line 27 through page 10, line 9 of the present application. Support for the tooth prosthesis can be found in at least page 7, line 17 of the present application.

Applicant also submits, with this amendment, a new drawing sheet illustrating the dental component of Claims 37-41, 51-55 and 79-82. Applicant submits that no new matter was added and support for dental components can be found in at least page 7, lines 14-17 of the present application.

In addition, the Applicant has amended the Specification, as provided above, to describe the new figures and reference numbers as described herein. Applicant submits that no new matter was added.

**Application No.:** 10/591,372  
**Filing Date:** June 25, 2007

## REMARKS

In response to the Office Action mailed April 16, 2009, Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the foregoing amendments and the following remarks.

### *Summary of the Outstanding Office Action*

In the April 16, 2009 Office Action, Claims 1-4, 6, 7, 10, 11 and 17-36 stand rejected. The drawings stand objected to under 37 C.F.R. § 1.83(a) as failing to show every feature of the invention specified in Claims 1, 17-20, 31-34, 22, 23 and 36. Claims 1-4, 6, 7, 10, 11 and 17-36 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 and 22-31 of copending Application No. 11/035,266 and claims 1-20 of copending Application No. 10/587,497. Claims 1-4, 7, 10, 11, 17-20, 23-26 and 28-34 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2005/0164146 by Cantor (hereinafter "Cantor"). Claims 1-4, 6, 7, 10, 11 and 17-36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,591,029 issued to Zuest (hereinafter "Zuest"). Claims 19, 20, 33 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cantor in view of U.S. Patent No. 5,816,813 issued to Hansson et al. (hereinafter "Hansson").

### *Objection to the Drawings*

In the Office Action, the drawings stand objected to under 37 C.F.R. § 1.83(a) as failing to show every feature of the invention specified in the claims. As stated above, the Applicant hereby submits new drawing sheets, which in conjunction with the other drawing sheets previously submitted, show every feature specified in the claims.

New Figure 1A is similar to Figure 1, with new reference number 1a which illustrates an example of a threaded inner surface of Claims 17-20 and 31-34. Similarly, new Figure 1B illustrates an example of internal grooves or a grooved surface 1b, as recited in Claims 1 and 23. New Figure 1C illustrates an example of vertical extending grooves 1c, as recited in Claims 22 and 36. Also, reference number 11 was added in Figures 1A – 1C to identify an example of a tooth prosthesis, as in Claims 38, 54 and 82. Applicant submits that no new matter was added

**Application No.:** 10/591,372  
**Filing Date:** June 25, 2007

and support for the surface features can be found in at least page 9, line 27 through page 10, line 9 of the present application. Support for the tooth prosthesis can be found in at least page 7, line 17 of the present application.

Applicant also submits, with this amendment, new Figure 1D illustrating the dental component 10 of Claims 37-41, 51-55 and 79-82. Applicant submits that no new matter was added and support for dental components can be found in at least page 7, lines 14-17 of the present application.

Accordingly, it is respectfully submitted that the amended drawings show every feature of the invention specified in the claims and thus the objection to the drawings has been overcome.

#### ***Double Patenting***

Applicant notes the provisional double patenting rejection over co-pending Applications Nos. 11/035,266 and 10/587,497. Applicant respectfully requests this provisional rejection be held in abeyance until subject matter is allowed in the cases of the '266 or '497 applications.

#### ***Rejection under 35 U.S.C. § 102(e)***

In the Office Action, Claims 1-4, 7, 10, 11, 17-20, 23-26 and 28-34 stand rejected under 35 U.S.C. §102(e) as being anticipated by Cantor. The Office Action states, "Cantor discloses a dental implant 100 having a coronal end 104, an apical end forming annular surface 120 threaded external surface 112, first grooved inner surface 140 and second inner surface 130. In regard to claim 2, note stop mark 102. In regard to claim 7, the threads form a rough surface. In regard to claims 10 and 11, note Figures 13 and 14.

To antedate the reduction to practice date of the present application and traverse the 35 U.S.C. §102(e) rejection, Applicant submits along with this amendment a declaration under 37 C.F.R. §1.131. This declaration indicates that presently claimed invention was reduced to practice prior to the effective filing date of Cantor. Accordingly, it is respectfully submitted that the rejection over Cantor has been overcome.

#### ***Rejection under 35 U.S.C. § 103(a)***

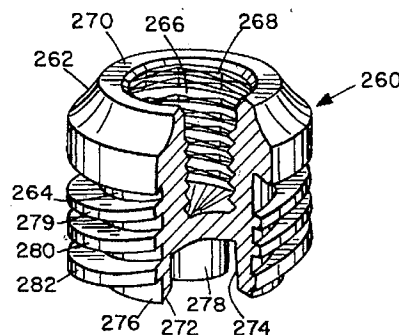
In the Office Action, Claims 19, 20, 33 and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cantor in view of Hansson et al. The Office Action states, "To the

extent that the threading on the Cantor implant does not meet the 'micro threads' limitations of claims 19, 20, 33 and 34, Hansson et al teaches that microthreads provide for rapid bone growth (column 3, lines 36-46). To have made the Cantor threading of such a size in order to promote rapid bone growth would have been obvious to one of ordinary skill in the art."

As discussed previously, to antedate the reduction to practice date of the present application and traverse the 35 U.S.C. §103(a) rejection, Applicant submits along with this amendment a declaration under 37 C.F.R. §1.131. This declaration swears back the reduction to practice date of the internal threading limitation prior to the effective filing date of Cantor.

***Rejection under 35 U.S.C. § 102(b)***

In the Office Action, Claims 1-4, 6, 7, 10, 11 and 17-36 stand rejected under 35 U.S.C. §102(b) as being anticipated by Zuest. With reference to Figure 20, reproduced below, the Office Action states, "note the implant body 260 having a coronal end forming abutment surface 262, 270 and apical end with annular surface 272. The external surface of the implant is threaded 279, 280, 282. The implant includes a first inner surface having internal grooves 266 and (longitudinal 268) and a second inner surface formed immediately above element 278 which is 'joined' to the first inner surface. It is noted while the disclosed implant is different from Zuest, the claimed implant is not. In regard to claims 2-4, note the shoulder below element 262. In regard to claim 6, note column 15, lines 26-30. In regard to claim 7, the external threads provide for a rough surface. In regard to claims 10 and 11, note column 16, lines 23-29. In regard to claim 18, the internal and external threads are synchronized in the same direction. In regard to claim 21, note Figures 16 and 17. In regard to claim 22, note longitudinal grooves 268."



**Zuest**

Claim 1:

Application No.: 10/591,372  
Filing Date: June 25, 2007

While Applicant reserves the right to prosecute Claim 1 as originally filed, Applicant has amended Claim 1 in order to expedite prosecution of this Application. Claim 1 was amended in the description of the second inner surface to replace the phrase "is joined to" with "intersects with" in order to more distinctly claim the subject matter of the invention.

Zuest does not teach the limitation of a second inner surface that faces in a generally apical direction, as recited in Claim 1. See Figure 1 of the present application, reproduced below. The second inner surface in Zuest that "intersects with" the first inner surface is the transverse surface that extends across the bottom of the threaded bore 266. See annotated Figure 20 of Zuest, below. This inner surface in Zuest faces generally in the coronal direction, not generally in the apical direction. The implant of Claim 1, on the other hand, orients the first and second inner surfaces to open toward the apical direction, where the grooved surface can accept and integrate with bone tissue. The first and second inner surfaces of the device in Zuest cannot integrate with bone tissue since they open toward the coronal direction, which faces away from bone tissue. Thus, the Applicant submits that Zuest does not teach a second inner surface that *"faces in a generally apical direction."*

Claim 1:

A dental implant for supporting a dental restoration in a jawbone, the dental implant comprising:

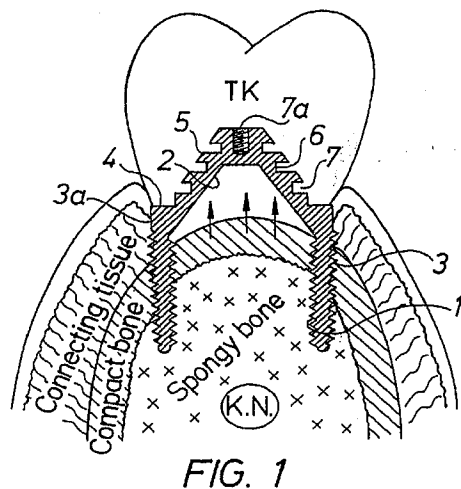
- a body extending along a longitudinal axis and having a coronal end and an apical end, the coronal end forming, in part, a coronal surface that extends generally transverse to the longitudinal axis and the apical end, in part, forming an annular surface that extends generally transverse to the longitudinal axis;

- an external surface extending between the coronal surface and the annular surface and generally facing away from the longitudinal axis of the dental implant, the external surface including a threaded surface that extends substantially to the apical end of the body;

- a first inner surface concentric with the external surface, the first inner surface generally facing toward the longitudinal axis of the dental implant, at least a portion of the first inner surface including internal grooves; and

- a second inner surface that intersects with the first inner surface along an outer circumference of the second inner surface and extends generally transverse to the longitudinal axis of the dental implant and faces in a generally apical direction.

Coronal Direction
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**Present Application**

Accordingly, Applicant respectfully submits that Claim 1 is not anticipated by Zuest and is in condition for allowance. Claims 1-4, 6, 7, 10, 11 and 17-22 are allowable for at least the reason that these claims depend from allowable Claim 1 and upon their own merits as well.

**Claim 23:**

While Applicant reserves the right to prosecute Claim 23 as originally filed, Applicant has amended Claim 23 in order to expedite prosecution of this Application. Claim 23 was amended in the description of the second inner surface to replace the phrase “is joined to” with “intersects with” to more distinctly claim the subject matter of the invention.

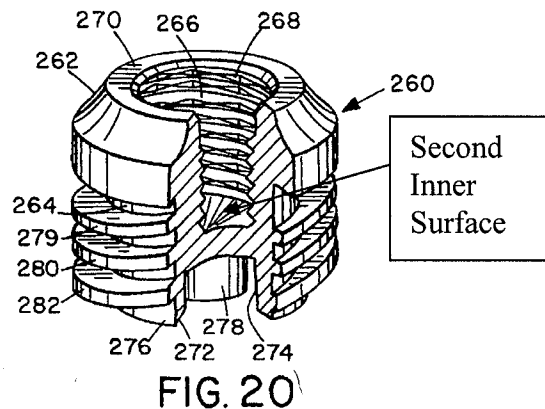
For at least reasons similar to those stated for amended Claim 1, the Applicant submits that amended Claim 23 is in condition for allowance. Claims 24-36 are allowable for at least the reason that these claims depend from allowable Claim 23 and upon their own merits as well.

**New Claims**

Applicant has added new Claims 37-91. Claims 37-64 depend upon independent Claim 1 or 23 discussed above and, for at least this reason, are also in condition for allowance.

New independent Claim 65 recites:

A dental implant for supporting a dental restoration in a jawbone, the dental implant comprising:  
a body extending along a longitudinal axis and having a coronal end and an apical end, the coronal end forming, in part, a coronal surface that extends generally transverse to the longitudinal axis and the apical end, in part, forming an annular surface that extends generally transverse to the longitudinal axis;



**Zuest (annotated)**

an external surface extending between the coronal surface and the annular surface and generally facing away from the longitudinal axis of the dental implant, the external surface including threads that extend along the external surface in a longitudinal direction;

a first inner surface concentric with the external surface, the first inner surface generally facing toward the longitudinal axis of the dental implant, at least a portion of the first inner surface including grooves that form a grooved surface; and

a second inner surface that intersects with the first inner surface along an outer circumference of the second inner surface and extends generally transverse to the longitudinal axis of the dental implant and faces in a generally apical direction;

a third inner surface generally concentric with the external surface, the third inner surface generally facing toward the longitudinal axis of the dental implant, at least a portion of the third inner surface including threads; and

a fourth inner surface that intersects with the third inner surface along an outer circumference of the fourth inner surface and extends generally transverse to the longitudinal axis of the dental implant and faces in a generally coronal direction.

As noted above, Zuest does not disclose a second inner surface that faces in a generally apical direction. In addition, Claim 49 includes “a third inner surface generally concentric with the external surface, the third inner surface generally facing toward the longitudinal axis of the dental implant, at least a portion of the third inner surface including threads; and a fourth inner surface that intersects with the third inner surface along an outer circumference of the fourth inner surface and extends generally transverse to the longitudinal axis of the dental implant and faces in a generally coronal direction.” Zuest does not disclose an implant that comprises inner surfaces with threads or grooves that are open in the generally apical direction **and** the generally coronal direction. Zuest only discloses an inner surface with threads that opens in the coronal direction, as seen in Figure 20 of Zuest. In clear contrast, the present application discloses two inner surfaces with threads, as illustrated in Figure 1 of the present application. The inner surface 1 is open in the generally apical direction and inner surface 7a is open in the generally coronal direction.

For at least these reasons, the Applicant submits that Zuest, taken alone or in combination with the other prior art of record, does not disclose or suggest a dental implant having inner surfaces with threads that open in the generally apical direction and the generally coronal direction, as disclosed in Claim 49. Therefore, Claim 49 is in condition for allowance and Claims 48-69 are allowable for at least reason that they depend from allowable Claim 49 and upon their own merits as well.

**Application No.:** 10/591,372  
**Filing Date:** June 25, 2007

***No Disclaimers or Disavowals***

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

***Co-Pending Applications of Assignee***

Applicant wishes to draw the Examiner's attention to the following co-pending applications of the present application's assignee.

<b>Serial Number</b>	<b>Title</b>	<b>Filed</b>
11/035,266	ANCHORING ELEMENT FOR USE IN BONE	01/12/2005
10/587,497	ANCHORING ELEMENT FOR USE IN BONE	07/20/2007
11/250,900	FIXTURE FOR ANCHORING IN JAW BONE	10/14/2005
10/582,586	ARRANGEMENT AND SYSTEM FOR ANCHORING OF AN IMPLANT AND INSTALLATION ON THE IMPLANT OR IMPLANTS	04/11/2007

**CONCLUSION**

Applicant respectfully submits that the above rejections and objections have been overcome and that the present application is now in condition for allowance. Therefore, Applicant respectfully requests that the Examiner indicate that the pending claims are now acceptable and allowed. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

Applicant respectfully submits that the claims are in condition for allowance in view of the above remarks. Any remarks in support of patentability of one claim, however, should not be



**Application No.:** 10/591,372  
**Filing Date:** June 25, 2007

imputed to any other claim, even if similar terminology is used. Additionally, any remarks referring to only a portion of a claim should not be understood to base patentability on that portion; rather, patentability must rest on each claim taken as a whole. Applicant respectfully traverses each of the Examiner's rejections and each of the Examiner's assertions regarding what the prior art shows or teaches, even if not expressly discussed herein. Although amendments have been made, no acquiescence or estoppel is or should be implied thereby. Rather, the amendments are made only to expedite prosecution of the present application, and without prejudice to presentation or assertion, in the future, of claims on the subject matter affected thereby. Applicant also has not presented arguments concerning whether the applied references can be properly combined in view of, among other things, the clearly missing elements noted above, and Applicant reserves the right to later contest whether a proper reason exists to combine these references and to submit indicia of the non-obviousness of the claimed management system.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claim and drawings in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney in order to resolve such issue promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: 7-15-09

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